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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,538	03/07/2002	Kikuo Ono	501.41304X00	5542

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EXAMINER

DUONG, THOI V

ART UNIT PAPER NUMBER

2871

DATE MAILED: 03/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,538

Applicant(s)

ONO ET AL.

Examiner

Thoi V Duong

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 ~~is/are~~ are pending in the application.
- 4a) Of the above claim(s) 4-30, 32-49 and 55 ~~is/are~~ are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 31 and 50-54 ~~is/are~~ are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1203.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species 7, claims 31 and 50-54 on 12/17/2003 is acknowledged. The traversal is on the ground(s) that generic claims 1-3 have not been rejected and are considered to be allowable and therefore applicant is entitled to consideration of more than one species. This is not found persuasive because this application contains 9 distinct species and no generic claim is held to be allowable at this time.

The requirement is still deemed proper and is therefore made FINAL.

Accordingly, claims 1-3, 31 and 50-54 are to be examined in this office action.

Claim Objections

2. Claim 31 is objected to because of the following informalities: "said one electrode" in line 11 of the claim should be "said other electrode." Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Miyahara et al. (USPN 6,297,867 B1).

Re claims 1 and 2, as shown in Figs. 4 and 5 (attached), Miyahara et al. discloses a liquid crystal display device being characterized in that a pixel electrode 30' (vertical portion) and a counter electrode 31' (vertical portion) which are arranged by way of an insulation film (36, 41) are formed on each pixel region at a liquid-crystal side of one transparent substrate out of transparent substrates 21, 22 which are arranged to face each other in an opposed manner by way of liquid crystal 34 (see Fig. 5), an electric field having a component parallel to said transparent substrates is generated between these respective electrodes (col. 5, lines 19-25), said pixel electrode is constituted of a transparent electrode (col. 8, lines 51-58) formed on a region which is disposed around the counter electrode and is not superposed on the counter electrode, and said insulation film has a multi-layered structure formed of a sequential laminated body which comprises an insulation film which constitutes a portion of a gate insulation film 36 of said thin film transistor and a protective film 41 which avoids a direct contact of said thin film transistor with liquid crystal (Fig. 5 and col. 12, lines 4-17). Note that, according to the specification, page 4, lines 6-8, the multi-layered structure is a structure in which the insulation films are laminated at least in two layers.

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The liquid crystal display device of Miyahara et al. also includes thin film transistors 26 which are driven by the supply of scanning signals and supplies video signals to said pixel electrodes by said driving (col. 5, lines 1-25).

Re claim 3, Fig. 4 of Miyahara et al. shows that the counter electrode 31' is formed in a region of said pixel region except for a periphery of said pixel region, and the pixel electrode is formed of a plurality of electrodes 30' (vertical portion) which are extended in one direction in a superposed manner on the counter electrode and are arranged in the direction which intersects said one direction (horizontal portion of the pixel electrode).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 31, 50 and 51 rejected under 35 U.S.C. 103(a) as being obvious over Yanagawa et al (USPN 5,870,160) in view of JP 09-258269 A (JP'269).**

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject

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matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

As shown in Figs. 10 and 16, Yanagawa et al. discloses a liquid crystal display device characterized in that a pair of electrodes CT, PX which generate an electric field in a spreading direction of liquid crystal are formed on each pixel region on a liquid-crystal-side surface of one transparent substrate SUB1 out of transparent substrates SUB1, SUB2 which are arranged to face each other in an opposed manner by way of said liquid crystal (col. 3, lines 4-14), and

a pair of said electrodes are formed in different layers and the electrode CT is formed of a transparent electrode formed in a region which is disposed around the other electrode PX and is not superposed on the other electrode PX (col. 1, lines 16-22).

Re claim 31, Yanagawa et al. discloses a liquid crystal display that is basically the same as that recited in claim 31 except that the other electrode PX is not formed in a pattern which constitutes a region which makes the direction of an electric field E

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which is generated between said other electrode PX and said one electrode CT different. As shown in Fig. 1, JP'269 discloses a liquid crystal display comprising a pixel electrode 2 and a counter electrode 3 formed in a bended form such that the direction of an electric field 7 is different in upper portion and lower portion centering around the bending line of the pixel electrode and the common electrode. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Yanagawa with the teaching of Lee et al. by forming electrodes having a pattern which constitutes a region which makes the direction of an electric field E which is generated between said other electrode PX and said one electrode CT different to produce a multidomain display with a high numerical aperture (see Abstract).

Re claims 50 and 51, Yanagawa et al. discloses a liquid crystal display that is basically the same as that recited in claims 50 and 51 except that the other electrode does not comprise a plurality of electrodes which are arranged in parallel in the direction perpendicular to an extension direction of said pixel electrode and said respective electrodes are formed as bent patterns at a boundary portion of said pixel region which is divided in halves.

As shown in Fig. 4, JP'269 discloses a liquid crystal display comprising a pixel electrode 2 having a plurality of electrodes (vertical portions) and a common electrode 3 having a plurality of electrodes (vertical portions), which are arranged in parallel in the direction perpendicular to an extension direction of said pixel electrode (horizontal portion) and said respective electrodes are formed as bent patterns at a boundary

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portion of said pixel region which is divided in halves, wherein the division of said pixel region is made in the direction which approximately intersects the initial orientation direction 6 of said liquid crystal (see also Fig. 1), and an opening angle of said bent portions of said other electrodes having bent portions are set to an obtuse angle. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display of Yanagawa et al. with the teaching of JP'269 by forming pixel electrode comprising a plurality of electrodes formed as bent patterns at a boundary portion of said pixel region which is divided in halves so as to produce a multidomain display with a high numerical aperture (see Abstract).

7. Claim 52-54 are rejected under 35 U.S.C. 103(a) as being obvious over Yanagawa et al (USPN 5,870,160) in view of Lee et al. (USPN 5,946,066) and JP 09-318972A (JP'972).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the

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application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(I)(1) and § 706.02(I)(2).

As shown in Figs. 10 and 16, Yanagawa et al. discloses a liquid crystal display device characterized in that a pair of electrodes CT, PX which generate an electric field in a spreading direction of liquid crystal are formed on each pixel region on a liquid-crystal-side surface of one transparent substrate SUB1 out of transparent substrates SUB1, SUB2 which are arranged to face each other in an opposed manner by way of said liquid crystal (col. 3, lines 4-14), and

a pair of said electrodes are formed in different layers and the electrode CT is formed of a transparent electrode formed in a region which is disposed around the other electrode PX and is not superposed on the other electrode PX (col. 1, lines 16-22).

Yanagawa et al. discloses a liquid crystal display that is basically the same as that recited in claim 52 except that the other electrode does not include bent portions which change the extension direction and light-shielding members are formed on said bent portions by way of an insulation film. As shown in Figs. 2A and 2B, Lee et al. discloses a pixel electrode including bent portions which change the extension direction and light-shielding member 10 formed on said bent portions to block a parasitic electric field generated by the pixel electrode and the data line (col. 1, lines 57-60).

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Re claim 53, said other electrode is constituted of a plurality of electrodes which are arranged in parallel in the direction which intersects the extension direction said other electrode, bent portions of said respective electrodes are positioned on an imaginary line (the inside periphery of the light-shielding member 10) which transverses substantially the center of said pixel region, and the light-shielding member formed on and along said imagine line.

However, this light-shielding member is not formed on said bent portions by way of an insulation film.

Re claims 52 and 54, as shown in Fig. 5, JP'972 discloses a black matrix 216 formed on a pixel line 219 by way of an insulation 218; JP'972 also discloses that the black matrix is also a counter electrode so as to secure sufficient capacitance and produce a display with high numerical aperture (see Abstract).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid crystal display device of Yanagawa et al. with the teaching of Lee et al. and JP'972 by forming the other electrode including bent portions which change the extension direction and light-shielding members formed on said bent portions by way of an insulation film so as to block a parasitic electric field and to produce a display with high numerical aperture.


Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thoi V. Duong whose telephone number is (571) 272-

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2292. The examiner can normally be reached on Monday-Friday from 8:30 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim, can be reached at (571) 272-2293.

Thoi Duong 

02/27/2004

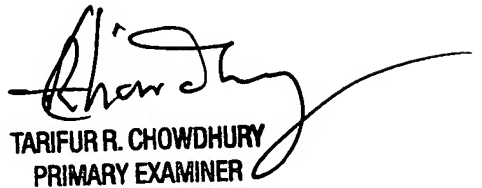

TARIFUR R. CHOWDHURY
PRIMARY EXAMINER

Fig. 4

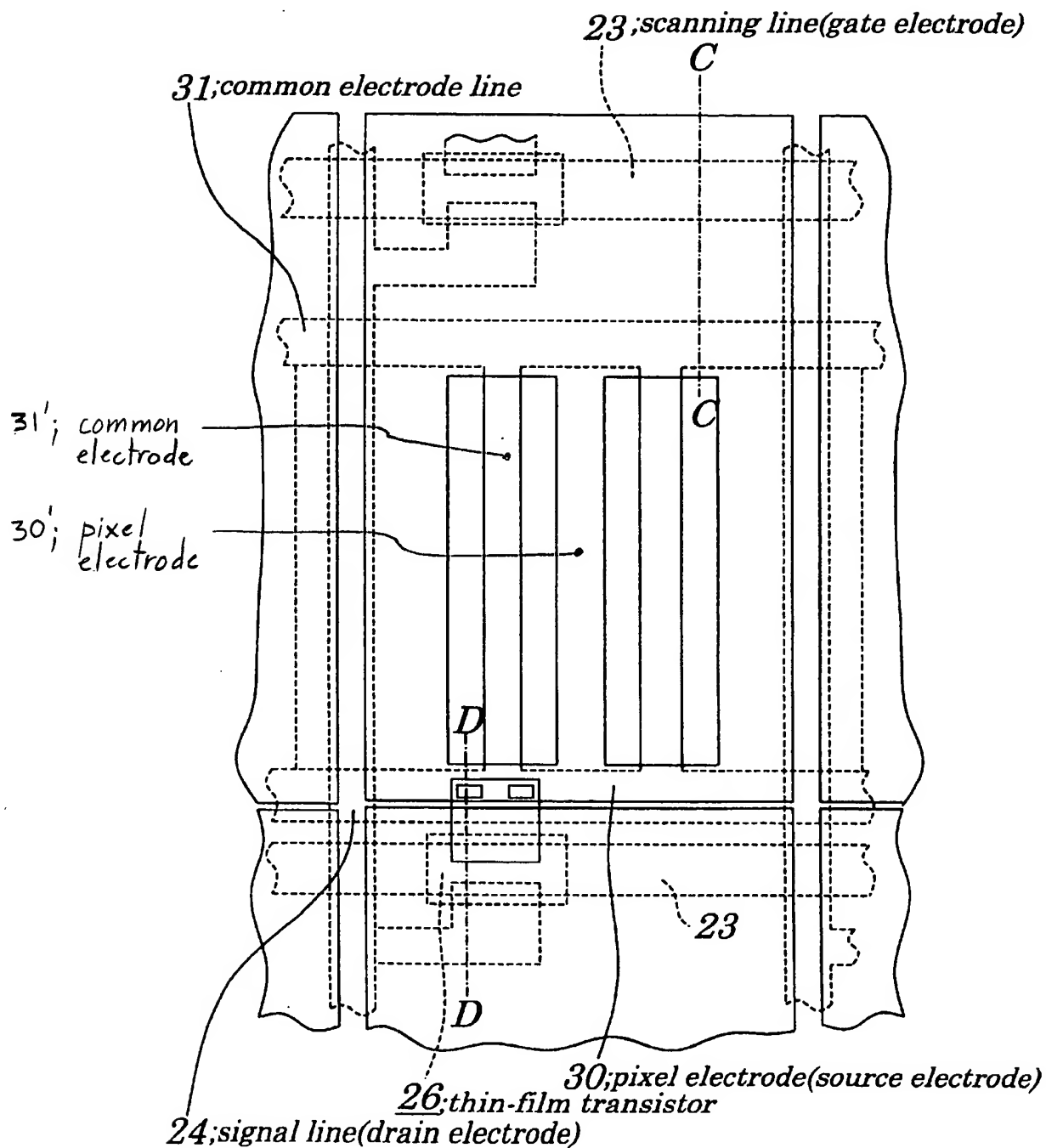


Fig. 5

